ACE INDUSTRIAL PRODUCTS
PORTABLE AIR CLEANER
MODEL 73-200

INSTRUCTION & MAINTENANCE MANUAL

CAUTION: This device is powered by rotating electrical machinery!! Careless or improper use may result in personal injury. Read the Safety Precautions and Warnings contained within prior to operating this machine.

READ AND SAVE THESE INSTRUCTIONS.

SAFETY WARNINGS & CAUTIONS

FAILURE TO OBSERVE THE FOLLOWING PRECAUTIONS COULD RESULT IN SERIOUS INJURY, INCLUDING DEATH IN EXTREME CASES. SAVE THESE INSTRUCTIONS.

WARNING: (EXPLOSION HAZARD)

This unit contains universal motors, which spark during normal operation. Do not use in areas contaminated by volatile or flammable materials as these sparks may ignite the contaminates and cause a dangerous explosion.

WARNING: (HARMFUL FUMES)

The filters used in this unit will remove solid particulate ONLY, and do not eliminate fumes and gases that may be a health hazard. Failure to observe the presence of such fumes could cause serious illness or death.

CAUTION: (SHOCK HAZARD)

To insure continued protection against shock hazard, connect AC cord only to properly grounded outlets. Replace defective cords immediately. Do not expose to moisture or liquid as this could defeat the electrical insulation thus causing electrical shock.

CAUTION: (STRONG VACUUM)

Care must be taken to avoid personal injury by not allowing hose inlet to contact any body area such as eyes, ears, mouth, etc.

CAUTION: (LIFTING)

Although this unit weighs less than 40 lbs. with filters, improper lifting or handling of this unit could cause back injury. Follow the recommended method for lifting.

CAUTION: (AIRFLOW BLOCKAGE)

Since exhaust air leaves the bottom of this unit, caution should be observed not to set unit down in such a way as to block the exhaust.

MISCELLANEOUS CAUTIONS:

1. Use of any attachment not recommended or sold by the air cleaner manufacturer may result in risk of fire, electric shock, or injury to persons.

2. To reduce the risk of damage to the electric plug or cord, disconnect by pulling plug rather than cord when removing power from the air cleaner.

3. Make sure cord and hose are located so they will not be stepped on, tripped over, or otherwise subjected to damage or stress.

4. An extension cord should not be used unless absolutely necessary. Use of improper extension cord could result in risk of fire and electric shock. If extension cord must be used, use only a grounded cord and follow these recommendations:

   25 ft. - #14 AWG.
   50 ft. - #12 AWG.
   100 ft. - #10 AWG.

5. Do not disassemble the air cleaner. Take it to a qualified serviceman when service or repair is required. Incorrect reassembly may result in risk of electric shock or fire.

6. To reduce the risk of electric shock or bodily injury, unplug the air cleaner from outlet before attempting any maintenance or cleaning. Turning off the power switch will not eliminate this risk.

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THEORY OF OPERATION

This unit is a lightweight, portable air cleaner employing two thermally protected, high performance, flow through vacuum motors producing very high velocity airflow through the unit. By utilizing a large (2 ½") inlet plus a variety of collecting nozzles and fittings, fine solid particulate material and smoke may be removed from the air by the filter media.

An initial spark trap collects large particles before they reach the filter. An easy to empty tray is attached to the front cover to enable the removal of the large particles collected by the spark trap without removing the filter. This trap further isolates the filter from sparks in the case of a welding operation.

Upon leaving the trap, the air is passed through a one-inch (1") thick, 20 to 35% efficient pre-filter. This pre-filter is designed to catch the larger particles leaving the trap. This relatively inexpensive pre-filter prevents the more expensive main filter from becoming quickly clogged. The pre-filter should be changed several times before the main filter needs to be changed.

All factory-furnished filters have a U.L. class II rating and using any filters other than those specified for this unit is not recommended.

Use of any product other than that recommended by the manufacturer will void the warranty.

The main (or final) filter may be selected from three (3) grades available, depending upon the level of performance desired. All of these are high efficiency multi-flow filters, which feature extended surface area for long life in high velocity filtration systems.

Selection of the filter best suited for the job should be discussed with a dealer or a factory representative.

A "clogged" filter light, actuated by a differential pressure switch is an integral part of the unit. When the filters become clogged, the light will illuminate. At this point, the filters should be changed. Depending upon the application, the pre-filter should be changed several times before the main filter must be changed. Changing the pre-filters regularly will extend the useful life of the final filter up to 50%.

GENERAL MAINTENANCE

ONLY QUALIFIED SERVICE TECHNICIANS SHOULD MAKE REPAIRS TO THIS UNIT.

DO NOT REPLACE THESE MOTORS WITH MOTORS OTHER THAN THOSE RECOMMENDED BY THE MANUFACTURER.

UNPACKING

Carefully inspect the unit for concealed damage that may have occurred during shipping and handling. If any damage is found, immediately contact the Freight Company. Make sure there are no dents in the housing, as they might prevent the filter from sliding into the unit smoothly. If there is no evidence of damage, remove the end cover by releasing the two rubber latches. Removal of the front cover will allow inspection of the inside of the unit.

After unpacking the machine, check to see that the following parts and accessories are present:

1) - 10' Flexible Hose
1) - Coupling
1) - Flexible Metal Hose/Magnetic Base Component Parts. (See Figure #2 For Individual Parts Included)
1) - Slot Nozzle
1) - Pre-filter

INSTALLATION (See Figure #1)

1. Unpack a main filter and note the main filter has a 1/8" thick, black rubber gasket on the outlet end. Please also note that the filter has an airflow direction arrow placed on one of the edges. Insert the filter, gasket first, into the machine with the arrow pointing toward the rear of the unit, away from the inlet end. Make sure that the filter media folds run vertically. If they do not, remove the filter and rotate it 90°.
2. Place the pre-filter directly against the main filter with the wire supported side toward the main filter and the media folds again running vertically.
3. Replace the front cover/spark trap assembly and re-latch the cover using the rubber latches.
4. Connect the unit to the power source and test the operation of the unit by turning it ON with the On/Off switch. Should the motors not start, or should the machine make unusual noises, immediately turn the machine off and seek trained maintenance personnel. Once the test is complete, turn the unit back OFF.
5. Attach the hose to the inlet.
6. Assemble the flexible metal hose and nozzle per Figure #2.
7. Connect the hose/nozzle combination assembled in Step 6 above to the machine with the 10' flexible hose and the supplied coupling.

This completes the basic assembly of the unit. Depending upon the accessories ordered and the logistics of the work place, the installation configuration may vary.

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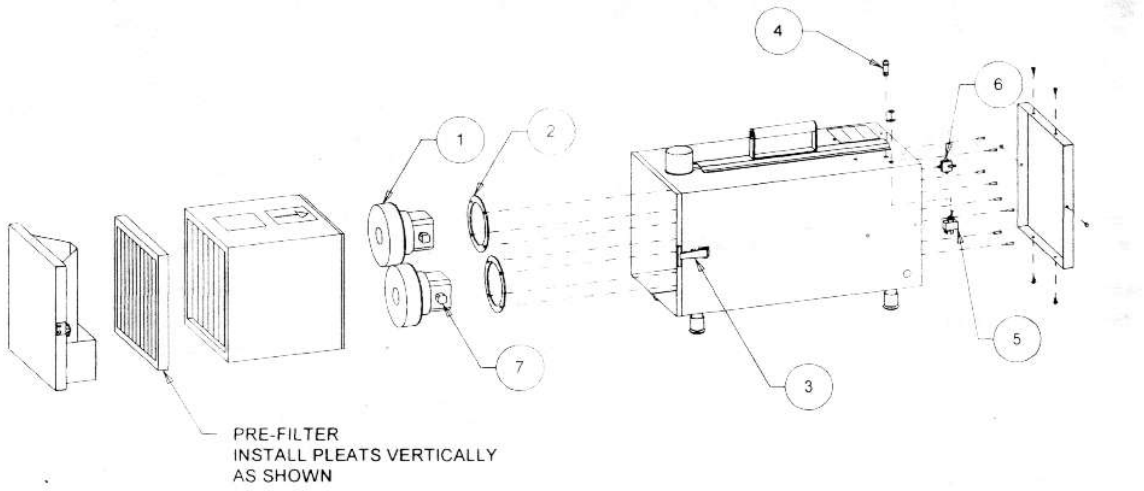

Figure 1

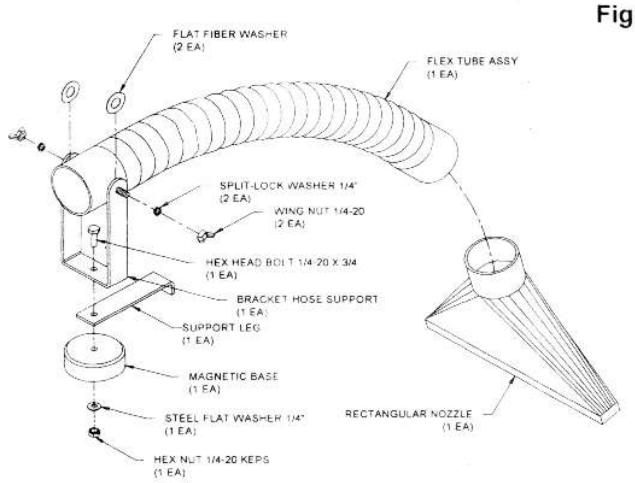
FLAT FIBER WASHER (2 EA)
FLEX TUBE ASSY (1 EA)
SPLIT-LOCK WASHER 1/4" (2 EA)
WING NUT 1/4-20 (2 EA)
HEX HEAD BOLT 1/4-20 X 3/4 (1 EA)
BRACKET HOSE SUPPORT (1 EA)
SUPPORT LEG (1 EA)
MAGNETIC BASE (1 EA)
STEEL FLAT WASHER 1/4" (1 EA)
HEX NUT 1/4-20 KEPS (1 EA)
RECTANGULAR NOZZLE (1 EA)

Figure 2

OPERATION

Your ACE Industrial Products machine is designed as a source capture device, i.e., it is intended to eliminate smoke and particulate at their point of origin. Keeping this in mind, the machine should be operated in the following manner:

Re-read the section on Safety Warnings & Cautions before proceeding any further.

1. Place the machine on a flat, level surface. Pick a location that will allow unrestricted flow of the exhaust air to the atmosphere.

2. For units with wheels or casters, lock the wheels or block the wheels.

3. Place the collection nozzle as close to the work as practical without interfering with the operator. Secure the nozzle if necessary.

4. Using the ON/OFF switch, turn the machine on. Should the motor not start, or should the machine make unusual noises, immediately turn the machine off and seek trained maintenance personnel. Do not continue to use the unit.

5. Upon completion of the specific manufacturing or welding operation, turn the machine off. Continuous running of the unit will reduce the life of the filter and the motor brushes as well as increase utility cost.

6. When the "clogged" filter light indicates that the filter is clogged, turn the machine off and remove power cord from its power source.

   See the section on installation and use the reverse process to remove the dirty filters. Re-install the new filter and reconnect the machine to its power source.

MAINTENANCE & REPLACEMENT PARTS

FILTERS:

As previously stated in the "Theory of Operation" section of this manual, the "clogged" filter indicator light will light whenever the differential pressure across the filter indicates that the filter is clogged. When opening the unit, there are no vacuum hoses to disconnect since the pressure sensing is accomplished by measuring at the inlet and inside the suction chamber. The differential pressure trip point is preset and is not field adjustable.

If the "clogged" filter light should light, the pre-filter should be changed first, since it is the least expensive of the two. **By changing the pre-filter on a regular basis, the main filter will last up to 50% longer in most applications**. If the light still lights after the pre-filter is changed, the main filter is clogged and must be changed.

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REPLACEMENT FILTERS

65% Efficiency Main filter 12"x12"x12"	65008
95% Efficiency Main filter 12"x12"x12"	65009
99.97% HEPA Main filter 12"x12"x12"	65010
Extended Surface Pre-filter (3.2 sq. ft.)	65011
Charcoal (odor control) Final filter	65037
Economy Pre-filter (1 sq. ft.)	65039
99.97% HEPA Main filter 12"x12"x6" (for use with (6) 65037 filters	65042
Charcoal filter with Zeolyte (neutralizes nitric oxide)	65044
Pre-filter wrap 12"x250 yd	91-963

MAINTENANCE:

WARNING: MAINTENANCE ON THIS UNIT SHOULD BE PERFORMED ONLY BY QUALIFIED, TRAINED TECHNICIANS.

1. Motor brushes are available from the factory by ordering Part No. 65007. The use of high performance, ball sleeve motors provide about 500 hours of brush operation (depending upon filter condition). Brushes should be periodically checked after 500 hours use and if worn, replace as a matter or preventative maintenance.

2. Vacuum Motors are available from the factory by ordering Part No. 65001. These motors are thermally protected by an automatic reset thermal circuit breaker and will shut down if they are overheated due to lack of airflow or locked rotor condition.

DO NOT REPLACE THESE MOTORS WITH A MOTOR THAT DOES NOT HAVE A THERMAL OVERLOAD!!!

REPAIR PARTS

1) Motor w/screws	65001
2) Motor Gasket	65002
3) Rubber Latch	65003
4) Clogged Filter Indicator Light	65004
5) ON/OFF Toggle Switch	65005
6) Differential Pressure Switch	65006
7) Motor brushes	65007

ACCESSORIES

The following accessories and attachments are available from the factory or from your ACE dealer.

Flex Tube	65012
Magnetic Base	65014
8" Diameter Round Nozzle	65015
4" Suction Cup Base	65016
10' Extension Hose & Coupling	65017
3" Caster/Mobility Kit	65018
Slot Nozzle	65019
20" Slot Nozzle	65036
Mobile Cart	65038
"T" Adapter	65040
Reducer, 1-1/4" (Smoke Extracting Gun)	65041
Reducer, 1-1/2" (Smoke Extracting Gun)	65043
Power-Matic Inductive switch	99-800

SCHEMATIC WIRING DIAGRAM

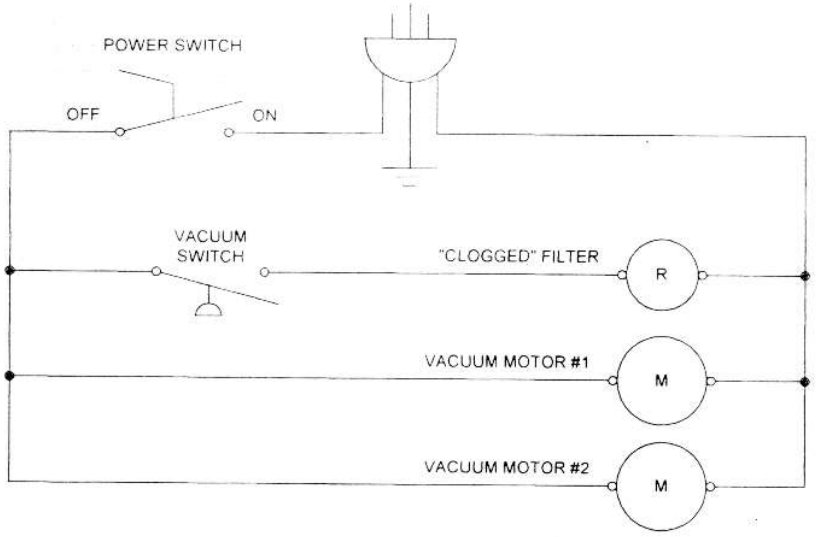

Figure 3

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